

Title (en)  
APPARATUS AND METHOD FOR MONITORING SURROUNDING ENVIRONMENT OF VEHICLE

Title (de)  
VORRICHTUNG UND VERFAHREN ZUM ÜBERWACHEN DER UMGEBUNG EINES FAHRZEUGS

Title (fr)  
APPAREIL ET PROCÉDÉ DE SURVEILLANCE D'ENVIRONNEMENT D'UN VÉHICULE

Publication  
**EP 4095552 A1 20221130 (EN)**

Application  
**EP 22174408 A 20220519**

Priority  
KR 20210068397 A 20210527

Abstract (en)  
An apparatus for monitoring the surrounding environment of a vehicle may include: a sensor unit including a plurality of detection sensors configured to detect an object outside the vehicle according to frames with a predefined period; and a control unit configured to extract a stationary object among outside objects detected through the sensor unit by using behavior information of the vehicle, map the extracted stationary object to a preset grid map, add occupancy information to each of grids constituting the grid map depending on whether the stationary object is mapped to the grid map, calculate an occupancy probability parameter indicating the probability that the stationary object will be located at each of the grids, from the occupancy information added to the grids within the grid map in a plurality of frames, and monitor the surrounding environment of the vehicle on the basis of the calculated occupancy probability parameter.

IPC 8 full level  
**G01S 13/42** (2006.01)

CPC (source: EP KR US)  
**B60W 40/02** (2013.01 - KR); **B60W 40/10** (2013.01 - KR); **G01S 13/42** (2013.01 - EP); **G01S 13/56** (2013.01 - KR); **G01S 13/89** (2013.01 - US); **G01S 13/931** (2013.01 - KR US); **B60W 2050/0026** (2013.01 - KR); **B60W 2050/0057** (2013.01 - KR); **B60W 2520/10** (2013.01 - KR); **B60W 2554/20** (2020.02 - KR); **B60W 2555/20** (2020.02 - KR); **B60Y 2400/3017** (2013.01 - KR); **G01S 2013/9327** (2020.01 - KR)

Citation (applicant)  
KR 20130130843 A 20131031

Citation (search report)  
• [I] US 2017269201 A1 20170921 - ADACHI JINGO [JP], et al  
• [I] WO 2020257642 A1 20201224 - INTEL CORP [US]  
• [A] US 2014071240 A1 20140313 - CHEN YU-SUNG [TW], et al

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

Designated validation state (EPC)  
KH MA MD TN

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**EP 4095552 A1 20221130**; **EP 4095552 B1 20231115**; KR 20220160320 A 20221206; US 2022390593 A1 20221208

DOCDB simple family (application)  
**EP 22174408 A 20220519**; KR 20210068397 A 20210527; US 202217825745 A 20220526